Application Number 10/602,384
Responsive to Office Action mailed February 23, 2007

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A concentration monitor ~~for monitoring a concentration of a plurality of use solutions, each of said plurality of use solutions being, at least, a concentrate in a diluent, each of said plurality of use solutions having a resistivity which varies as a function of both temperature and an amount of said concentrate contained in a given amount of said diluent~~, comprising:

a resistivity probe ~~adapted for use with at least one of said plurality of use solutions for taking a measurement related to said~~ that measures resistivity of ~~said at least one of said plurality of~~ a selected one of a plurality of use solutions;

a temperature sensor ~~adapted for use with said at least one of said plurality of use solutions for taking a measurement related to said~~ that measures a temperature of ~~said at least one of said plurality of~~ the selected use solution[[s]]; and

a controller that calculates a concentration of a product in the use solution based on the resistivity, the temperature and a predetermined algorithm associated with the selected use solution ~~, operatively coupled to said resistivity probe and said temperature sensor, calculating said concentration of said at least one of said plurality of said use solutions based upon a predetermined algorithm using said resistivity and said temperature for said particular one of said at least one of said plurality of use solutions, said algorithm being based upon knowledge of said at least one of said plurality of use solutions being measured~~.

Claim 2 (Currently Amended): The [[A]] concentration monitor of ~~as in~~ claim 1 wherein the ~~said~~ controller stores information concerning identification of the selected use solution ~~said knowledge of which of said at least one of said plurality of use solutions are being measured~~.

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Claim 3 (Currently Amended): The [[A]] concentration monitor of as in claim 2 wherein the said controller receives user selected information concerning identification of the selected use solution stores said knowledge, at least in part, by use of a user controllable setting.

Claim 4 (Currently Amended): The [[A]] concentration monitor of as in claim 1, further including a user interface that wherein said controller also reports the said concentration to a user.

Claim 5 (Currently Amended): The [[A]] concentration monitor of as in claim 1 wherein said the algorithm is linear.

Claim 6 (Currently Amended): The [[A]] concentration monitor of as in claim 1 wherein said the controller performs a function based upon the said concentration.

Claim 7 (Currently Amended): The [[A]] concentration monitor of as in claim 1 [[6]] wherein said function adds the controller further controls addition of concentrate of the product to the use solution said diluent when the said concentration falls below a predetermined certain level.

Claims 8-13 (Canceled).

Claim 14 (Currently Amended): A method comprising: of monitoring a concentration of a plurality of use solutions, each of said plurality of use solutions being, as least, a concentrate in a diluent, each of said plurality of use solutions having a resistivity which varies as a function of both temperature and an amount of said concentrate contained in a given amount of said diluent, using a resistivity probe adapted for use with at least one of said plurality of use solutions for taking a measurement related to said resistivity of said at least one of said plurality of use solutions and a temperature sensor adapted for use with said at least one of said plurality of use solutions for taking a measurement related to said temperature of said at lest one of said plurality of use solutions, comprising the steps of:

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selecting <u>one of a</u> ~~said selected one of said plurality of use solutions from said~~ plurality of use solutions;

measuring <u>a resistivity of the selected use solution</u> ~~said resistivity of said selected one of said plurality of use solutions using said resistivity probe~~;

measuring <u>a temperature of the selected use solution</u> ~~said temperature of said selected one of said plurality of use solutions using said temperature probe~~; and

calculating <u>a product</u> ~~said~~ concentration of <u>the selected</u> ~~said at least one of said plurality of said~~ use solution[[s]] based upon <u>the</u> ~~a predetermined algorithm using said~~ resistivity<u>, the</u> ~~and said~~ temperature <u>and a predetermined algorithm associated with the selected use solution</u> ~~for said particular one of said at least one of said plurality of use solutions, said algorithm being based upon which of said plurality of use solutions has been selected~~.

Claim 15 (Currently Amended): <u>The</u> [[A]] method <u>of</u> [[as in]] claim 14 further comprising <u>reporting the</u> ~~the step of reporting said~~ concentration to a user.

Claim 16 (Currently Amended): <u>The</u> [[A]] method <u>of</u> [[as in]] claim 14 further comprising ~~the step of~~ adding concentrate <u>of the product</u> to <u>the use solution when the</u> ~~said diluent when said~~ concentration falls below a <u>predetermined</u> ~~certain~~ level.

Claim 17 (Currently Amended): <u>The</u> [[A]] method <u>of</u> [[as in]] claim 14 further comprising ~~the steps of~~ inserting <u>a</u> ~~said~~ resistivity probe into [[a]] <u>the</u> selected ~~one of said plurality of~~ use solution[[s]] and inserting <u>a</u> ~~said~~ temperature probe into <u>the</u> ~~said~~ selected ~~one of said plurality of~~ use solution[[s]].

Claim 18 (New): The concentration monitor of claim 1 wherein the algorithm is determined based on empirical measurements of use solutions having known product concentrations.

Claim 19 (New): The concentration monitor of claim 1 wherein the algorithm is determined based on empirical measurements of the conductivity of use solutions having known product concentrations.

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Claim 20 (New): The concentration monitor of claim 18 wherein the empirical measurements are taken over a range of temperatures.

Claim 21 (New): The concentration monitor of claim 18 wherein the algorithm includes an equation fit to the empirical measurements.

Claim 22 (New): The concentration monitor of claim 18 wherein the algorithm includes a lookup table corresponding to the empirical measurements.

Claim 23 (New): The concentration monitor of claim 1 wherein the predetermined algorithm associated with the selected use solution is further associated with a product classification of the product.

Claim 24 (New): The concentration monitor of claim 23 wherein the product classification is user selectable.

Claim 25 (New): The concentration monitor of claim 1, further including a memory that stores a plurality of predetermined algorithms, wherein each of the plurality of predetermined algorithms corresponds to a different one of a plurality of product classifications.

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